What is claimed is:

1. A printer head using a radio frequency micro-electromechanical system (RF MEMS) sprayer, comprising:

an inner pressure chamber having a liquid inlet and a liquid outlet;

a cavity resonator surrounding the inner pressure chamber, wherein the cavity resonator provides a predetermined cavity resonance frequency signal to increase an inner pressure of the inner pressure chamber;

a signal transmitting unit for generating the predetermined cavity resonance frequency signal and for inputting the generated cavity resonance frequency signal into the inner pressure chamber through the cavity resonator in response to an external input control signal; and

a liquid chamber for supplying a liquid to the inner pressure chamber, the liquid chamber being in flow communication with the inner pressure chamber through the liquid inlet,

wherein the liquid inlet and the liquid outlet each extend through the inner pressure chamber and the cavity resonator so that when an inner pressure of the inner pressure chamber is increased by the cavity resonator,

a liquid from within the inner pressure chamber is ejected outwardly through the liquid outlet.

2. The printer head as claimed in claim 1, wherein the cavity resonator is formed of a metal having a hermetically sealed structure.

3. The printer head as claimed in claim 1, further comprising a substrate having a nozzle disposed in a position corresponding to the liquid outlet, the substrate being welded to a lower side of the cavity resonator where the liquid outlets are formed.

4. The printer head as claimed in claim 3, wherein the cavity resonator comprises a coupling slot formed on a lower side of the cavity resonator, which is in contact with the substrate, the coupling slot receiving the cavity resonance frequency signal from the cavity resonator.

5. The printer head as claimed in claim 4, wherein the signal transmitting unit is disposed at a position corresponding to the coupling slot with the substrate being disposed therebetween.

6. The printer head as claimed in claim 5, wherein the signal transmitting unit comprises:

a signal generator for generating the cavity resonance frequency signal; and

a signal input terminal disposed at a position corresponding to the coupling slot for inputting the cavity resonance signal to the cavity resonator through the coupling slot.

7. The printer head as claimed in claim 6, wherein the signal transmitting unit further comprises:

a signal amplifier for amplifying the cavity resonance frequency signal from the signal generator.

8. The printer head as claimed in claim 3, wherein the signal transmitting unit is disposed at a position on the substrate corresponding to the liquid outlet, the substrate being disposed therebetween, the signal transmitting unit inputs the cavity resonance signal into the cavity resonator through the liquid outlet, wherein the nozzle extends to a position corresponding to the liquid outlet.

9. The printer head as claimed in claim 1, wherein the cavity resonator further comprise:

a coupling slot formed on a side of the cavity resonator for receiving the cavity resonance frequency signal into the cavity resonator.

10. The printer head as claimed in claim 1, wherein the liquid inlet prevents a liquid inside the inner pressure chamber from flowing back into the liquid chamber when an inner pressure of the inner pressure chamber is increased by the cavity resonator.

11. The printer head as claimed in claim 3, wherein the substrate further comprises:

a plurality of nozzles, each nozzle corresponding to a position of one of a plurality of liquid outlets.

12. The printer head as claimed in claim 11, wherein the inner pressure chamber surrounded by the cavity resonator is a plurality of inner pressure chambers, each being surrounded by a respective one of a plurality of cavity resonators, and wherein each of the plurality of inner pressure chambers is disposed at a predetermined distance interval from an adjacent one of the plurality of inner pressure chambers.